Impact Assessment for Biological Resources

June 2, 2006

Overview

- **Construction and O&M impacts**
- **Fish and wildlife effects/benefits**
- **Performance relative to goals**

Construction and O&M Impacts

- **Approach**
  - **Qualitative evaluation**
  - **General impacts, not site specific**
  - **Evaluated impacts at the time of construction**
- **Conclusions**
  - **All action alternatives have potentially significant construction impacts on one or more biological resources**
  - **Some significant effects likely could be avoided at the project level**
  - **Alternatives including a Marine Sea likely to have the greatest construction-related biological impacts**
  - **Overall benefits likely would offset construction impacts**
  - **Impacts of operations and maintenance activities not expected to be significant**
  - **O&M impacts likely could be avoided or mitigated**

Evaluation of Effects of Restoration on Fish and Wildlife

- **General Approach**
  - **Qualitative evaluation of the ability of created water bodies to support fish, primarily tilapia**
  - **Projected bird use based on modeling conducted by PRBO**
- **Key Assumptions**
  - **Created water bodies (habitats) would perform as expected**
  - **System would be adaptively managed**
  - **Bird populations would recover when conditions at the Salton Sea improve with restoration**
  - **Water bodies would remain highly eutrophic**

Effects of Restoration on Fish

- **All created water bodies with suitable salinity and water quality likely to support tilapia**
- **Increasing fish diversity would require future introductions**
- **Alternatives with Marine Sea component most likely to support recent members of fish community if re-introduced**
- **Fish population likely to continue to experience periodic die-off events**

Effects of Restoration on Birds

- **Bird Modeling Approach**
  - **Model based on bird densities at the Salton Sea in 1999**
  - **Bird density predictions for shallow water habitats with high salinity based on S.F. Salt Pond densities**
  - **Model variables include salinity, water depth, and proximity to areas such as managed wetland and crop lands**
  - **Predictions based on conditions at 2078**
  - **15 bird species modeled**

Bird Species Modeled

- ***Aechmophorus* spp.**
- **American Avocet**
- **American White Pelican**
- **Black-necked Stilt**
- **Black Tern**
- **Double-crested Cormorant**
- **Dowitcher spp.**
- **Dunlin**
- **Eared Grebe**
- **Long-billed Curlew**
- **Marbled Godwit**
- **Ruddy Duck**
- **Snowy Egret**
- **Snowy Plover**
- **Western Sandpiper**

Potential Effects on Birds

- **Model results still under review**
- **Preliminary results suggest:**
  - **Bird diversity likely retained -- all modeled species likely to persist at the Salton Sea following restoration**
  - **Abundance may decline for some and increase for others relative to existing (1999) and historic conditions**
  - **Factors within management control (e.g., salinity) influence bird use, which could contribute to adaptive management**

Summary

- **Upon completion, restoration would represent a substantial improvement over the No Action Alternative for fish and wildlife**
- **Individual species would respond differently to each alternative**
- **All species may not be supported at historic levels**
- **Adaptive management would improve potential for successful restoration**